



[4910-13-P]

DEPARTMENT OF TRANSPORTATION

Federal Aviation Administration

14 CFR Part 39

[Docket No. FAA-2017-0874; Product Identifier 2015-SW-082-AD]

RIN 2120-AA64

Airworthiness Directives; Sikorsky Aircraft Corporation Helicopters

AGENCY: Federal Aviation Administration (FAA), DOT.

ACTION: Notice of proposed rulemaking (NPRM).

SUMMARY: We propose to adopt a new airworthiness directive (AD) for Sikorsky Aircraft Corporation (Sikorsky) Model S-76C helicopters. This proposed AD would require inspecting the engine collective position transducer (CPT). This proposed AD is prompted by reports of wear of the CPT that has resulted in several One Engine Inoperative (OEI) incidents. The proposed actions are intended to detect and prevent an unsafe condition on these products.

DATES: We must receive comments on this proposed AD by [INSERT DATE 60 DAYS AFTER DATE OF PUBLICATION IN THE FEDERAL REGISTER].

ADDRESSES: You may send comments by any of the following methods:

- Federal eRulemaking Docket: Go to <http://www.regulations.gov>. Follow the online instructions for sending your comments electronically.
- Fax: 202-493-2251.

- Mail: Send comments to the U.S. Department of Transportation, Docket Operations, M-30, West Building Ground Floor, Room W12-140, 1200 New Jersey Avenue SE, Washington, DC 20590-0001.

- Hand Delivery: Deliver to the “Mail” address between 9 a.m. and 5 p.m., Monday through Friday, except Federal holidays.

Examining the AD Docket

You may examine the AD docket on the Internet at <http://www.regulations.gov> by searching for and locating Docket No. FAA-2017-0874; or in person at the Docket Operations Office between 9 a.m. and 5 p.m., Monday through Friday, except Federal holidays. The AD docket contains this proposed AD, the economic evaluation, any comments received, and other information. The street address for the Docket Operations Office (telephone 800-647-5527) is in the ADDRESSES section. Comments will be available in the AD docket shortly after receipt.

For service information identified in this proposed rule, contact Sikorsky Aircraft Corporation, Customer Service Engineering, 124 Quarry Road, Trumbull, CT 06611; telephone 1-800-Winged-S or 203-416-4299; email wcs_cust_service_eng.gr-sik@lmco.com. You may review the referenced service information at the FAA, Office of the Regional Counsel, Southwest Region, 10101 Hillwood Pkwy, Room 6N-321, Fort Worth, TX 76177.

FOR FURTHER INFORMATION CONTACT: Nick Rediess, Aviation Safety Engineer, Boston ACO Branch, Compliance and Airworthiness Division, 1200 District Avenue, Burlington, MA 01803; telephone (781) 238-7159; email nicholas.rediess@faa.gov.

SUPPLEMENTARY INFORMATION:

Comments Invited

We invite you to participate in this rulemaking by submitting written comments, data, or views. We also invite comments relating to the economic, environmental, energy, or federalism impacts that might result from adopting the proposals in this document. The most helpful comments reference a specific portion of the proposal, explain the reason for any recommended change, and include supporting data. To ensure the docket does not contain duplicate comments, commenters should send only one copy of written comments, or if comments are filed electronically, commenters should submit only one time.

We will file in the docket all comments that we receive, as well as a report summarizing each substantive public contact with FAA personnel concerning this proposed rulemaking. Before acting on this proposal, we will consider all comments we receive on or before the closing date for comments. We will consider comments filed after the comment period has closed if it is possible to do so without incurring expense or delay. We may change this proposal in light of the comments we receive.

Discussion

We propose to adopt a new AD for Sikorsky Model S-76C helicopters with a Turbomeca, S.A., Arriel 2S1 or Arriel 2S2 engine and with a CPT part number (P/N) 76900-01821-104 installed. This proposed AD is prompted by 20 reports of One Engine Inoperative (OEI) incidents resulting from wear of a CPT. One of these incidents resulted in a rejected takeoff to an unprepared site. A CPT provides signals to the Digital Engine Control Units (DECU) to anticipate power demand. A worn CPT can send an erroneous

signal to the DECU. This condition can cause a power split between the two engines and a subsequent OEI condition, which can result in an emergency landing.

Accordingly, this proposed AD would require initial and recurring inspections of the CPTs, and depending on the outcome of the inspections, replacing the CPT. The proposed actions are intended to detect wear of a CPT prior to it causing an OEI condition and possible emergency landing.

FAA's Determination

We are proposing this AD because we evaluated all known relevant information and determined that an unsafe condition exists and is likely to exist or develop on other products of the same type designs.

Related Service Information Under 1 CFR part 51

We reviewed Sikorsky S-76 Helicopter Alert Service Bulletin (ASB) 76-73-8, Revision A, dated December 4, 2015 (ASB 76-73-8A), which specifies a one-time inspection of total resistance, linearity resistant movement, excitation voltage, and differential voltage of the CPTs using CPT Text Box P/N 76700-40009-042.

We also reviewed Sikorsky Maintenance Manual, SA 4047-76C-2, Temporary Revision No. 73-07, dated August 17, 2016 (TR 73-07), which specifies procedures for removing, installing, and adjusting the CPTs, and inspections of total resistance, linearity resistant movement, excitation voltage, and differential voltage of the CPTs. TR 73-07 also divides the procedures by CPT Test Box P/N by providing separate procedures for test boxes modified by Sikorsky Special Service Instructions (SSI) No. 76-96, dated August 19, 2016, which is not incorporated by reference in this proposed AD.

This service information is reasonably available because the interested parties have access to it through their normal course of business or by the means identified in the ADDRESSES section.

Other Related Service Information

We reviewed Sikorsky S-76 Helicopter ASB 76-73-8, Basic Issue, dated August 21, 2015 (ASB 76-73-8). ASB 76-73-8 contains the same procedures as ASB 76-73-8A; however, ASB 76-73-8A updates Sikorsky's contact information for submitting a purchase order.

We also reviewed Sikorsky SA 4047-76C-2-1, Temporary Revision No. 5-181, dated August 21, 2015 (TR 5-181); Task 5-20-00 of Sikorsky Airworthiness Limitations and Inspection Requirements, Publication No. SA 4047-76C-2-1, Revision 24, dated December 15, 2015 (Task 5-20-00); and Section 73-22-04 of Chapter 73 Engine Fuel and Control, of Sikorsky Maintenance Manual, SA 4047-76C-2, Revision 31, dated December 15, 2015 (Section 73-22-04). TR 5-181 specifies adding CPT inspections referenced in Section 73-22-04 to the 300-hour inspection checklist contained in Task 5-20-00.

We reviewed Sikorsky Safety Advisory No. SSA-S76-11-0002, dated May 17, 2011. This service information provides precautionary instructions to minimize hazardous situations that might result from an unreliable CPT.

We reviewed Sikorsky SSI No. 76-96, dated August 19, 2016, which specifies procedures to modify CPT Test Box P/N 76700-40009-042 and re-identify it as P/N 76700-40009-043. This one-time modification reduces the instructions to inspect the CPT and improves the inspection accuracy.

We also reviewed Sikorsky SSI No. 76-87, dated July 24, 2015, and SSI No. 76-87A, Revision A, dated August 21, 2015. These SSIs specify a one-time inspection of total resistance, linearity resistant movement, excitation voltage, and differential voltage of the CPTs using CPT Text Box P/N 76700-40009-042.

Proposed AD Requirements

This proposed AD would require initial and recurring inspections of each CPT by measuring resistance, linearity resistance movement, and differential voltage, and depending on the outcome of the inspections, replacing the CPT.

Differences between this Proposed AD and the Service Information

Sikorsky ASB 76-73-8A and TR 73-07 specify using and returning Sikorsky's CPT data sheet to Sikorsky. This proposed AD would not require using Sikorsky's CPT data sheet or returning a data sheet to Sikorsky. TR 73-07 specifies adjusting the CPT transducers. This proposed AD would not require adjusting the CPT transducers. TR 73-07 specifies returning a failed CPT to Sikorsky. This proposed AD would not require returning a failed CPT to Sikorsky.

Interim Action

We consider this proposed AD to be an interim action. The design approval holder is currently developing a modification that will address the unsafe condition identified in this proposed AD. Once this modification is developed, approved, and available, we might consider additional rulemaking.

Costs of Compliance

We estimate that this proposed AD would affect 90 helicopters of U.S. Registry. We estimate that operators may incur the following costs in order to comply with this

AD. Labor costs are estimated at \$85 per work-hour. The inspections would take about 3.75 work-hours for an estimated cost of \$319 per helicopter and \$28,710 for the U.S. fleet per inspection cycle. Replacing a CPT would take about 6 work-hours and parts would cost \$3,072 for an estimated replacement cost of \$3,582.

Authority for This Rulemaking

Title 49 of the United States Code specifies the FAA's authority to issue rules on aviation safety. Subtitle I, section 106, describes the authority of the FAA Administrator. "Subtitle VII: Aviation Programs," describes in more detail the scope of the Agency's authority.

We are issuing this rulemaking under the authority described in "Subtitle VII, Part A, Subpart III, Section 44701: General requirements." Under that section, Congress charges the FAA with promoting safe flight of civil aircraft in air commerce by prescribing regulations for practices, methods, and procedures the Administrator finds necessary for safety in air commerce. This regulation is within the scope of that authority because it addresses an unsafe condition that is likely to exist or develop on products identified in this rulemaking action.

Regulatory Findings

We determined that this proposed AD would not have federalism implications under Executive Order 13132. This proposed AD would not have a substantial direct effect on the States, on the relationship between the national Government and the States, or on the distribution of power and responsibilities among the various levels of government.

For the reasons discussed, I certify this proposed regulation:

1. Is not a “significant regulatory action” under Executive Order 12866;
2. Is not a “significant rule” under the DOT Regulatory Policies and Procedures (44 FR 11034, February 26, 1979);
3. Will not affect intrastate aviation in Alaska to the extent that it justifies making a regulatory distinction; and
4. Will not have a significant economic impact, positive or negative, on a substantial number of small entities under the criteria of the Regulatory Flexibility Act.

We prepared an economic evaluation of the estimated costs to comply with this proposed AD and placed it in the AD docket.

List of Subjects in 14 CFR Part 39

Air transportation, Aircraft, Aviation safety, Incorporation by Reference, Safety.

The Proposed Amendment

Accordingly, under the authority delegated to me by the Administrator, the FAA proposes to amend 14 CFR part 39 as follows:

PART 39 - AIRWORTHINESS DIRECTIVES

1. The authority citation for part 39 continues to read as follows:

Authority: 49 U.S.C. 106(g), 40113, 44701.

§ 39.13 [Amended]

2. The FAA amends § 39.13 by adding the following new airworthiness directive (AD):

Sikorsky Aircraft Corporation: Docket No. FAA-2017-0874; Product Identifier 2015-SW-082-AD.

(a) Applicability

This AD applies to Sikorsky Aircraft Corporation Model S-76C helicopters, certificated in any category, with a Turbomeca, S.A., Arriel 2S1 or Arriel 2S2 engine with an engine collective position transducer (CPT) part number 76900-01821-104 installed.

(b) Unsafe Condition

This AD defines the unsafe condition as failure of a CPT. This condition could result in a reduction in power to one engine resulting in an annunciated One Engine Inoperative (OEI) condition and subsequent emergency landing.

(c) Comments Due Date

We must receive comments by [INSERT DATE 60 DAYS AFTER DATE OF PUBLICATION IN THE Federal Register].

(d) Compliance

You are responsible for performing each action required by this AD within the specified compliance time unless it has already been accomplished prior to that time.

(e) Required Actions

(1) Within 130 hours time-in-service (TIS):

(i) Measure resistance of each engine CPT and replace the CPT if the measured resistance is not within tolerance by following the Accomplishment Instructions, paragraphs 3.C.(1) through 3.C.(8)(b), of Sikorsky S-76 Helicopter Alert Service Bulletin ASB 76-73-8, Revision A, dated December 4, 2015 (ASB 76-73-8A), except you are not required to use Sikorsky's CPT data sheet or submit a data sheet to Sikorsky.

(ii) Measure the linearity resistance movement of each engine CPT and replace the CPT if there is a linear abnormality or change in resistance that is not within tolerance by following the Accomplishment Instructions, paragraphs 3.D.(1) through D.(14)(b), of ASB 76-73-8A, except you are not required to use Sikorsky's CPT data sheet or submit a data sheet to Sikorsky. Examples of linear abnormalities are depicted in Figure 3 of ASB 76-73-8A.

(iii) Measure the differential voltage of each engine CPT and replace the CPT if the measured voltage is not within tolerance by following the Accomplishment Instructions, paragraphs 3.E. through 3.G.(1) of ASB 76-73-8A, except you are not required to use Sikorsky's CPT data sheet or submit a data sheet to Sikorsky.

(2) Thereafter, at intervals not to exceed 300 hours TIS:

(i) For helicopters using Test Box P/N 76700-40009-042:

(A) Measure resistance of each engine CPT and replace the CPT if the resistance is not within tolerance by following paragraphs 4.B.(11) of Sikorsky Maintenance Manual, SA 4047-76C-2, Temporary Revision No. 73-07, dated August 17, 2016 (TR 73-07), except you are not required to use Sikorsky's CPT data sheet or return a failed CPT to Sikorsky.

(B) Measure the linearity resistance movement of each engine CPT and replace the CPT if the movement exceeds tolerance by following paragraphs 4.B.(12)(a) through 4.B.(13)(f) of TR 73-07, except you are not required to use Sikorsky's CPT data sheet or return a failed CPT to Sikorsky.

(C) Measure the differential voltage of each CPT by following paragraphs 4.B.(14) through 4.B.(15)(h) of TR 73-07, except you are not required to use Sikorsky's

CPT data sheet. If the maximum voltage is greater than 100 millivolts or the minimum voltage is less than -100 millivolts, replace the CPT.

(ii) For helicopters using Test Box P/N 76700-40009-043:

(A) Measure resistance of each engine CPT and replace the CPT if the resistance is not within tolerance by following paragraph 5.B.(11) of TR 73-07, except you are not required to use Sikorsky's CPT data sheet or return a failed CPT to Sikorsky.

(B) Measure the resistance linearity of each engine CPT and replace the CPT if the resistance is not within tolerance by following paragraph 5.B.(12) of TR 73-07, except you are not required to use Sikorsky's CPT data sheet or return a failed CPT to Sikorsky.

(C) Measure the differential voltage of each engine CPT and replace the CPT if the resistance is not within tolerance by following paragraphs 5.B.(13)(a) through B.(13)(k) of TR 73-07, except you are not required to use Sikorsky's CPT data sheet or return a failed CPT to Sikorsky.

(f) Credit for Previous Actions

Actions accomplished before the effective date of this AD in accordance with the procedures specified in Sikorsky S-76 Helicopter Alert Service Bulletin ASB 76-73-8, Basic Issue, dated August 21, 2015; Sikorsky Special Service Instruction SSI No. 76-87, dated July 24, 2015; or Sikorsky Special Service Instruction SSI No. 76-87, Revision A, dated August 21, 2015, are considered acceptable for compliance with the corresponding actions specified in paragraph (e)(1) of this AD.

(g) Alternative Methods of Compliance (AMOC)

(1) The Manager, Boston ACO Branch, FAA, may approve AMOCs for this AD. Send your proposal to: Nick Rediess, Aviation Safety Engineer, Boston ACO Branch, Compliance and Airworthiness Division, 1200 District Avenue, Burlington, MA 01803; telephone (781) 238-7159; email nicholas.rediess@faa.gov.

(2) For operations conducted under a 14 CFR part 119 operating certificate or under 14 CFR part 91, subpart K, we suggest that you notify your principal inspector, or lacking a principal inspector, the manager of the local flight standards district office or certificate holding district office before operating any aircraft complying with this AD through an AMOC.

(h) Additional Information

Sikorsky S-76 Helicopter Alert Service Bulletin ASB 76-73-8, Basic Issue, dated August 21, 2015; Sikorsky SA 4047-76C-2-1, Temporary Revision No. 5-181, dated August 21, 2015; Task 5-20-00 of Sikorsky Airworthiness Limitations and Inspection Requirements, Publication No. SA 4047-76C-2-1, Revision 24, dated December 15, 2015; Section 73-22-04 of Chapter 73 Engine Fuel and Control, of Sikorsky Maintenance Manual, SA 4047-76C-2, Revision 31, dated December 15, 2015; Sikorsky Safety Advisory No. SSA-S76-11-0002, dated May 17, 2011; Sikorsky Special Service Instruction (SSI) No. 76-96, dated August 19, 2016; Sikorsky SSI No. 76-87, dated July 24, 2015; and Sikorsky SSI No. 76-87, Revision A, dated August 21, 2015, which are not incorporated by reference, contain additional information about the subject of this AD. For service information identified in this AD, contact Sikorsky Aircraft Corporation, Customer Service Engineering, 124 Quarry Road, Trumbull, CT 06611; telephone 1-800-

Winged-S or 203-416-4299; email wcs_cust_service_eng.gr-sik@lmco.com. You may review a copy of information at the FAA, Office of the Regional Counsel, Southwest Region, 10101 Hillwood Pkwy, Room 6N-321, Fort Worth, TX 76177.

(i) Subject

Joint Aircraft Service Component (JASC) Code: 7600, Engine Controls.

Issued in Fort Worth, Texas, on September 6, 2017.

Scott A. Horn,

Deputy Director for Regulatory Operations,
Compliance & Airworthiness Division,
Aircraft Certification Service.

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